

What is claimed is:

- 1     1.     An antenna diversity receiver comprising:  
2             a first filter;  
3             a second filter;  
4             a low noise amplifier (LNA); and  
5             an output switch having a first switch position to couple an output of said first  
6 filter to an input of said LNA and a second switch position to couple an output of said  
7 second filter to said input of said LNA.
  
- 1     2.     The receiver of claim 1, wherein:  
2             said first filter has a first bandpass frequency range, said second filter has a  
3 second bandpass frequency range that is different from said first bandpass frequency  
4 range, and said LNA is operable within both said first and said second bandpass  
5 frequency ranges.
  
- 1     3.     The receiver of claim 1, further comprising:  
2             an antenna terminal; and  
3             a selector switch having a first switch position to couple said antenna terminal  
4 to an input of said first filter and a second switch position to couple said antenna  
5 terminal to an input of said second filter.
  
- 1     4.     The receiver of claim 3, further comprising:  
2             a receive antenna connected to said antenna terminal.
  
- 1     5.     The receiver of claim 3, wherein:  
2             said selector switch, said first and second filters, and said output switch are  
3 located within a common module and said LNA is implemented on a separate  
4 semiconductor chip that is coupled to said module.

1     6.     The receiver of claim 3, wherein:  
2             said selector switch, said first and second filters, said output switch, and said  
3     LNA are implemented on a common semiconductor chip.

1     7.     The receiver of claim 3, further comprising:  
2             a third filter that is different from said first and second filters, wherein said  
3     selector switch includes a third switch position to couple said antenna terminal to an  
4     input of said third filter.

1     8.     The receiver of claim 7, wherein:  
2             said output switch has a third switch position to couple an output of said third  
3     filter to an input of said LNA.

1     9.     The receiver of claim 7, wherein:  
2             said LNA is a first LNA and said output switch is a first output switch, said  
3     receiver further comprising a second LNA and a second output switch, said second  
4     output switch having a first switch position to couple an output of said third filter to an  
5     input of said second LNA.

1     10.    The receiver of claim 1, wherein:  
2             said first filter includes a surface acoustic wave (SAW) filter.

1     11.    The receiver of claim 1, wherein:  
2             said first filter includes a film bulk acoustic resonator (FBAR) filter.

1     12.    The receiver of claim 1, wherein:  
2             said receiver is a dual antenna diversity receiver.

1 13. A receiver comprising:  
2 a first antenna terminal;  
3 a first plurality of filters;  
4 a first selector switch to controllably couple said first antenna terminal to an  
5 input of a selected one of the filters in said first plurality of filters;  
6 at least one first low noise amplifier (LNA);  
7 at least one first output switch to controllably couple an output of said selected  
8 one of said filters in said first plurality of filters to an input of a corresponding first  
9 LNA;  
10 a second antenna terminal;  
11 a second plurality of filters;  
12 a second selector switch to controllably couple said second antenna terminal to  
13 an input of a selected one of the filters in said second plurality of filters;  
14 at least one second LNA; and  
15 at least one second output switch to controllably couple an output of said  
16 selected one of said filters in said second plurality of filters to an input of a  
17 corresponding second LNA.

1 14. The receiver of claim 13, wherein:  
2 said first plurality of filters and said second plurality of filters include an equal  
3 number of filters.

1 15. The receiver of claim 13, wherein:  
2 said first and second antenna terminals, said first and second pluralities of  
3 filters, said first and second selector switches, said at least one first output switch, and  
4 said at least one second output switch are located within a common module and said at  
5 least one first LNA and said at least one second LNA are located on a separate  
6 semiconductor chip that is coupled to said module.

1     16.     The receiver of claim 13, wherein:  
2             said first and second antenna terminals, said first and second pluralities of  
3     filters, said first and second selector switches, said at least one first output switch, said  
4     at least one second output switch, said at least one first LNA, and said at least one  
5     second LNA are located on a common semiconductor chip.

1     17.     The receiver of claim 13, further comprising:  
2             at least one other antenna terminal and at least one other selector switch.

1     18.     A module for use within an antenna diversity receiver system, comprising:  
2             a first antenna terminal;  
3             a first plurality of filters, said first plurality of filters including at least a first  
4     filter and a second filter;  
5             a first selector switch to controllably couple said first antenna terminal to an  
6     input of a selected one of the filters in said first plurality of filters;  
7             an output terminal for connection to an external low noise amplifier (LNA); and  
8             an output switch having a first switch position to couple an output of said first  
9     filter to said output terminal and a second switch position to couple an output of said  
10    second filter to said output terminal.

1     19.     The module of claim 18, wherein:  
2             said first plurality of filters further includes a third filter and a fourth filter; and  
3             said module further comprises:  
4                 a second output terminal for connection to a second external LNA; and  
5                 a second output switch having a first switch position to couple an output  
6     of said third filter to said second output terminal and a second switch position to  
7     couple an output of said fourth filter to said second output terminal.

1   20.    The module of claim 18, further comprising:  
2           a second antenna terminal;  
3           a second plurality of filters; and  
4           a second selector switch to controllably couple said second antenna terminal to  
5   an input of a selected one of the filters in said second plurality of filters.

1   21.    The module of claim 20, wherein:  
2           said module is for use within a dual antenna diversity receiver system.

1   22.    A system comprising:  
2           a first patch antenna;  
3           a second patch antenna; and  
4           a receiver comprising:  
5               a first antenna terminal coupled to said first patch antenna;  
6               a first plurality of filters;  
7               a first selector switch to controllably couple said first antenna terminal  
8   to an input of a selected one of the filters in said first plurality of filters;  
9               at least one first low noise amplifier (LNA);  
10              at least one first output switch to controllably couple an output of said  
11   selected one of said filters in said first plurality of filters to an input of a  
12   corresponding first LNA;  
13              a second antenna terminal coupled to said second patch antenna;  
14              a second plurality of filters;  
15              a second selector switch to controllably couple said second antenna  
16   terminal to an input of a selected one of the filters in said second plurality of  
17   filters;  
18              at least one second LNA; and  
19              at least one second output switch to controllably couple an output of  
20   said selected one of said filters in said second plurality of filters to an input of a  
21   corresponding second LNA.

1 23. The system of claim 22, wherein:  
2 said at least one first LNA includes a single LNA and said at least one first  
3 output switch includes a single output switch.

1 24. The system of claim 22, wherein:  
2 said at least one first LNA includes two LNAs and said at least one first output  
3 switch includes two output switches.

1 25. The system of claim 22, wherein:  
2 said system is a handheld communicator.

1 26. A method for use in an antenna diversity receiver comprising:  
2 when operation within a first frequency band is desired:  
3 coupling a first antenna to an input of a first filter; and  
4 coupling an output of said first filter to an input of a first low noise  
5 amplifier (LNA); and  
6 when operation within a second frequency band is desired:  
7 coupling said first antenna to an input of a second filter; and  
8 coupling an output of said second filter to said input of said first LNA.

1 27. The method of claim 26, further comprising:  
2 when operation within said first frequency band is desired:  
3 coupling a second antenna to an input of a third filter; and  
4 coupling an output of said third filter to an input of a second LNA; and  
5 when operation within said second frequency band is desired:  
6 coupling said second antenna to an input of a fourth filter; and  
7 coupling an output of said fourth filter to said input of said second LNA.

1     28.     The method of claim 26, wherein:  
2             coupling an output of said first filter to an input of a first LNA includes sending  
3     a control signal to a switch.

1     29.     The method of claim 26, further comprising:  
2             when operation within a third frequency band is desired:  
3                 coupling said first antenna to an input of a fifth filter; and  
4                 coupling an output of said fifth filter to an input of said first LNA.

1     30.     The method of claim 26, further comprising:  
2             when operation within a third frequency band is desired:  
3                 coupling said first antenna to an input of a fifth filter; and  
4                 coupling an output of said fifth filter to an input of a third LNA.